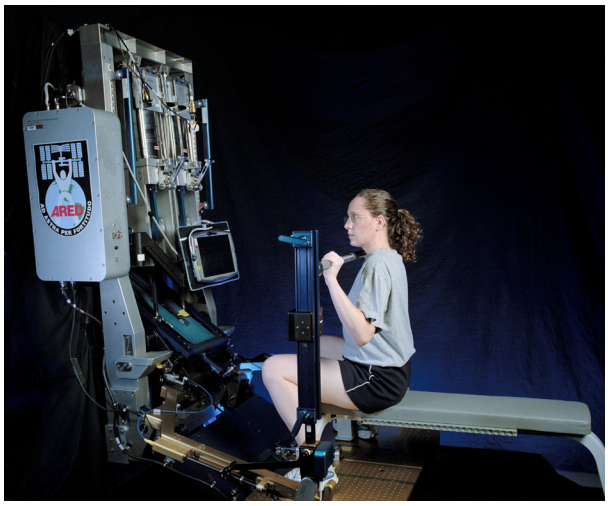
NASA-JSC BioSciences

Resistive Exercise Technology for Space Proves Irresistible Here on Earth

Studies have shown that between the ages of 20 and 70, there is an average 30% decline in muscle strength and a 40% reduction in muscle area.* Resistive strength exercise is a proven method to increase muscle mass for women and men, young and old. Regardless if you're in space, or right here on earth, we need muscle strength in order to live our daily lives. Resistive technology equipment is well-known not only for its rehabilitation use, but also used for high level athletic training and general fitness.



Opportunities to License NASA Technology: Resistive Exercise Technology

NASA's resistive exercise technology is designed to maintain muscle and bone density, as well as improve physical strength and endurance in space, and is now available here on earth. The technology translates well to life on earth for potential licensees in the fields of medical rehabilitation, fitness, athletic training and general healthcare. The technology consists of three pieces of equipment -- a resistive exercise device; an advanced resistive exercise device; and an articulating support for horizontal resistive exercise. All three pieces of equipment are more compact than existing equipment.

The resistive exercise device, which is near prototype stage, is a versatile machine that can be used to perform various customized exercises that previously required separate machines. The user can perform the three primary resistive exercises for stimulating bone regeneration; along with 15 other exercises for secondary muscle groups, including squats, dead lifts, heal raises, arm flies and hip abductions.

NASA scientists originally created the exercise technology to offset the adverse effects of long-term microgravity exposure, including muscle atrophy and loss of bone mineral density. However, the devices are adaptable to home and commercial use. Other potential uses include physical therapy and rehabilitation, as well as use at health clubs, hotels and on cruise ships. This exercise equipment is economical and durable, and provides a consistent, constant force both on the outstroke and the return stroke, similar to free-weight training.

Those parties interested in licensing this NASA-JSC technology should contact the Technology Transfer Office at 281.483.3809, jsc-techtrans@nasa.gov or visit http://technology.jsc.nasa.gov.

*Exerc Sport Sci Rev. 1993;21:65-102. (http://www.ncbi.nlm.nih.gov/entrez/queryfcgi?cmd=Retrieve&db=PubMed&list_uids=8504850&dopt=Citation)

About NASA-Johnson Space Center Techonology Transfer Office

The NASA-Johnson Space Center Techonology Transfer Office provides a means to advance internal technologies and innovations at NASA for both space-related endeavours and commercial applications. The office is a valuable resource at NASA as a pool for useful technology and innovations. Externally, the office provides strong assistance in helping entrepreneurs, companies and investors to bring useful technology to the marketplace. For more information on current technologies, to learn more about how to license NASA-JSC technologies, or to read success stories, visit http://technology.jsc.nasa.gov.

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